AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A method of locating cable splices and cable faults, comprising:

coupling an audio frequency generator to a cable to provide a magnetic field at an audio frequency;

receiving at least two orthogonal components of the ~~magentic~~ magnetic field at a receiver;

generating test values corresponding to the orthogonal components of the magnetic field along the cable route;

entering the test values at a plurality of test points on the cable route to a test value memory;

determining a degree of inhomogeneity along the cable route from the test values in the test value memory; and

displaying the degree of inhomogeneity.

2. (Original) The method of claim 1, wherein coupling the audio frequency generator to the cable includes:

connecting a first pole of the audio frequency generator to a first end of a central conductor of the cable;

connecting a second pole of the audio frequency generator to an earth ground; and

connecting a second end of the central conductor to the earth ground.

3. (Original) The method of claim 1, wherein receiving at least two orthogonal components of the magnetic field at the receiver includes:

detecting a first component of the magnetic field with a first antenna coil; and

detecting a second component of the magnetic field with a second antenna coil oriented orthogonally to the first antenna coil.

4. (Currently amended) ~~The method of claim 3, wherein generating test values corresponding to the orthogonal components of the magnetic field along the cable route includes:~~

A method of locating cable splices and cable faults, comprising:

coupling an audio frequency generator to a cable to provide a magnetic field at an audio frequency;

receiving at least two orthogonal components of the magnetic field at a receiver;

detecting a first component of the magnetic field with a first antenna coil;

detecting a second component of the magnetic field with a second antenna coil oriented orthogonally to the first antenna coil;

generating test values corresponding to the orthogonal components of the magnetic field along the cable route, wherein generating test values ~~corresponding to the orthogonal components of the magnetic field along the cable route~~ includes:

amplifying signals from the first antenna coil and the second antenna coil to produce amplified signals;

filtering the amplified signals to produce filtered signals; and

digitizing the filtered signals to produce the test ~~values.~~ values; and

entering the test values at a plurality of test points on the cable route to a test value memory;

determining a degree of inhomogeneity along the cable route from the test values in the test value memory; and

displaying the degree of inhomogeneity.

5. (Original) The method of claim 4, wherein amplifying signals includes

determining a first gain for amplifying signals from the first antenna coil; and

determining a second gain for amplifying signals from the second antenna coil.

6. (Original) The method of claim 4, wherein filtering the amplified signals includes

filtering the amplified signals with band pass filters that pass signals at an audio frequency matched with an output signal of a frequency generator, the

frequency generator being coupled to a cable to produce the magnetic field.

7. (Currently amended) The method of claim 1, wherein entering the test values at a plurality of test points on the cable route to a test value memory includes

entering an input to a ~~soft~~key at various points on the cable route to signify a test point;

storing the test values in a memory when the ~~soft~~key is activated.

8. (Original) The method of claim 1, wherein determining a degree of inhomogeneity along the cable route from the test values in the test value memory includes:

retrieving test values corresponding to various test points along the cable route that are stored in memory

determining the variation in the two orthogonal components of the magnetic field from the test values; and

scaling the variation to form the degree of inhomogeneity.

9. (Original) The method of claim 1, wherein displaying the degree of inhomogeneity includes:

indicating on a line trace the degree of inhomogeneity.

10. (Original) The method of claim 9, wherein indicating on a line trace includes utilizing differing coloration to indicate the degree of inhomogeneity.

11. (Original) The method of claim 9, wherein indicating on a line trace includes utilizing different line thicknesses to indicate the degree of inhomogeneity.

12. (Currently amended) The method of claim 9, wherein indicating on a line trace includes utilizing different line patterns to indicate the degree of inhomogeneity.

13. (Original) The method of claim 9, wherein the line trace is indicated on a display of the receiver.

14. (Original) The method of claim 1, further including overlaying a geo-information system cable route over the display to compare with the cable route.

15. (Withdrawn) A receiver, comprising:

a first antenna coil, the first antenna coil providing a first signal in response to a magnetic field;

a second antenna coil oriented orthogonally to the first antenna coil, the second antenna coil providing a second signal in response to the magentic field;

a first circuit coupled to receive the first signal from the first antenna coil;

a second circuit coupled to receive the second signal from the second antennal coil;

a processor coupled to the first circuit and the second ciruict, the processor receiving signals related to the first signal and the second signal;

a memory coupled to the processor; and

a softkey coupled to the processor,

wherein the processor executes instructions for taking test values in response to input from the softkey, storing the test values in the memory, and analysing the test values stored in the memory for inhomogeneities in the magnetic field.

16. (Withdrawn) The receiver of claim 15, wherein the first circuit includes an amplifier controllable by the processor and wherein the processor executes instructions for adjusting a gain of the amplifier based on signals from the first circuit.

17. (Withdrawn) The reciever of claim 16, wherein the first circuit further includes a filter coupled to the amplifier, the filter passing signals at a predetermined audio frequency.

18. (Withdrawn) The receiver of claim 17, wherein the first circuit further includes an analog-to-digital converter coupled to receive signals from the filter.

19. (Withdrawn) The receiver of claim 15, wherien the second circuit includes an amplifier controllable by the processor and wherein the processor executes instructions for adjusting a gain of the amplifier based on signals from the second circuit.

20. (Withdrawn) The receiver of claim 19, wherein the second circuit includes a filter coupled to the amplifier, the filter passing signals at a predetermined audio frequency.

21. (Withdrawn) The receiver of claim 20, wherein the second circuit includes an analog-to-digital converter couipled to receive signals from the filter.

22. (Withdrawn) The receiver of claim 15, futher including a geo-information-system for determining an expected cable route.

23. (Withdrawn) The reciever of claim 15, further including a display on which the degree of inhomogoneity in a magnetic field strength along the cable route can be displayed.

24. (Withdrawn) The receiver of claim 15, wherein the softkey switch includes a time controlled encoder, whereby test values can be obtained at predetermined times.

25. (Withdrawn) A system for locating cable splices and cable faults, comprising:
an audio frequency generator; and
a receiver, the receiver including:
a first antenna coil oriented to detect a horizontal component of a magnetic field from a cable coupled to the audio frequency generator,
a second antenna coil oriented to detect a vertical component of the magnetic field from the cable coupled to the audio frequency generator,
detection circuitry coupled to the first antenna coil and the second antenna coil, and
a processor coupled to the detection circuitry, the processor executing software code to determine a degree of inhomogeneity in the magnetic field from test values taken at test points along the cable.

26. (Withdrawn) The system of claim 25, wherein the detection circuitry includes a first amplifier coupled to receive signals from the first antenna coil, a first filter coupled to receive signals from the first amplifier, and a first analog-to-digital converter coupled to receive signals from the first filter.

27. (Withdrawn) The system of claim 25, wherein the detection circuitry includes a second amplifier coupled to receive signals from the second antenna coil, a second filter coupled to receive signals from the second amplifier, and a second analog-to-digital converter coupled to receive signals from the second filter.

28. (Withdrawn) The system of claim 25, further including a switch coupled to the processor, wherein the processor stores test values when the switch is activated.

29. (Withdrawn) The system of claim 28, wherein the switch is formed by a time controlled encoder.

30. (Currently amended) An apparatus for finding cable splices and cable faults, comprising:

means for coupling an audio frequency generator to a cable to provide a magnetic field at an audio frequency;

means for detecting two orthogonal components of a magnetic field from a cable;

means for obtaining test values at test points along the cable;

means for determining a degree of inhomogeneity in the magnetic field along the cable from the test values; and

means for displaying the degree of inhomogeneity in the magnetic field.